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turbance is felt as pain. Of course, "localization," "peculiar qualities," "local signs," and the like, are indications of perceptive synthesis—*R* is subordinating *S*, or is at least of equal importance. Now the phenomena of tickling and such cases as the one we have been studying bring out clearly the many possible varying shades between perception and feeling. Not strange is it that common language uses the word "feel" in both senses, and that psychologists are divided in their views as to the "sensational" theory of pain.²

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SECTION OF ANTHROPOLOGY AND PSYCHOLOGY OF THE NEW YORK ACADEMY OF SCIENCES

REPORT OF THE SECRETARY

A MEETING was held in conjunction with the New York Branch of the American Psychological Association on April 27, 1908. At the afternoon session, which was held in the Psychological Laboratory of Columbia University, Professor R. S. Woodworth presented a report on "Imagery of Time Relations," in which he noted the disproportion between our rich supply of time concepts and our meager perceptual experience of time, and proposed to test the hypothesis that time concepts were really composed of spatial concepts or images suffused with a temporal feeling. Mathematically, time can be represented by a point, or better a line or plane, moving along a line or axis, the present being any chosen position of the moving point, the past to the left, and the future to the right. All units and relations of time could be accurately represented in such a scheme. On examining a considerable number of persons, he found that such spatial representations of time occurred, though seldom, if ever, in a mathematically consistent form. Spatial forms for the year, as well as for the centuries, and for past and future, were not uncommon, being apparently considerably more common than the somewhat similar "number forms," though often less dis-

²My companions in merriment give unqualified and even enthusiastic endorsement to the description given above of the first mood of "being tickled." Inasmuch as they are well-educated and healthy individuals who have never studied psychology, I am inclined to think that their testimony has decided value, though they do not claim to have tried introspection on this or any other occasion.

tinct and less clearly conscious. But such time forms are not universally present; they have been found in about half of the forty individuals so far questioned. Of those who do not have them, some think of time concretely, *i. e.*, in terms of events or changes; while others employ what seem to be purely abstract concepts of time.

Mr. H. H. Woodrow made a report on "Reaction Time as Influenced by the Irregular Recurrence of the Stimulus." The object of the report was to show that reaction times for regularly recurring stimuli are considerably less than for irregular, providing the interval between the regularly recurring stimuli is not too long. As regards the effect of the interval, it was found that if the stimuli were irregular, there was very little difference in the reaction time for intervals varying from 0.8 sec. to 10.0 secs., while if the stimuli were given in regular succession the reaction time remained nearly constant for intervals from 0.8 sec. to about 4.0 secs., but increased with intervals longer than 4.0 secs.; and at 7.0 secs. was nearly as long as for totally irregular stimuli.

Professor Will S. Monroe presented the results of his experimental work on "Memories for Faces." He has used photographs as the material to be remembered, and by varying the conditions has determined several of the factors which contribute to the remembering or forgetting of a face once seen.

Professor Edward L. Thorndike, under the title, "Practise in a Purely Intellectual Function," reported an experiment in which 28 individuals multiplied mentally 95 examples, each consisting of a three-place number with no figure under 3, to be multiplied by a three-place number with no figure under 3. The work was done so as to occupy approximately sixteen days. Measuring the efficiency of the process inversely by the time taken (with an addition for each error of one tenth of the time per example) it was found that the median improvement for the 28 individuals was such as to give a reduction to 42 per cent. of the initial time. Some individuals improved two and a half times as much as others. The physiological limit for the function in question was, of course, not reached by any one in so short an experiment, but one individual, and possibly another also, did reach a point from which, within the limit of the experiment, no further improvement was made. The apparent differences in the change of rate of improvement were very great. On the supposition that the change of rate of improvement was due to one general law plus disturbing factors, Dr. Thorndike showed what this law would be on each of the two most likely hypotheses. The variability amongst individuals increased in the course of the experi-

ment, at least so far as concerns the differences between the upper quarter and the lower quarter of the 28 individuals. It would appear, therefore, that the experiment offered evidence that the influence of the environment is to accentuate rather than relieve initial inequalities of intellect. The experiment also offered evidence that within the field of so-called attention the influence of improvement in one mental function spreads little to other functions than it.

After dinner at the Faculty Club of Columbia University, an evening session was held at the American Museum of Natural History, the first paper being by Dr. H. A. Carr on "Involuntary Illusions of Depth." The paper gave a descriptive account of 48 cases gathered from a census of 350 students. The phenomenon consists of illusory transitions of the distance location of visual objects in the course of normal experience. The most pronounced fact was the lack of uniformity. The experiences were described under such headings as the kind of illusion, extent of visual field involved, character, direction, magnitude and rate of movement, changes in size and distinctness of the perceptual objects, degree of control possible, and such essential conditions as fatigue, mental absorption, ocular defects, steady fixation, etc. No explanation was attempted.

Dr. H. D. Marsh, speaking on the "Psychological Implicates of Certain Linguistic Expressions," showed how the study of the frequency of occurrence of sweeping terms, extensive and intensive, in diverse writings, could be made to yield valuable "internal evidence" regarding the authorship, and especially regarding personal and social characteristics. The intensive series of words included such positives as all, every, always, whoso, whatsoever, etc., and such negatives as no (adjective), none, nothing, no more, never, etc. The frequency of these words per 1,000 lines was determined for practically every book of the Bible, and it was found possible, with this single series of words, to follow most of the conclusions of the "higher critics" regarding disputed writings, both as to whole books and as to parts of books; and this with a high degree of reliability. Supplemented by an intensive series, this method would apparently work well.

A comparison of the first ten books of the Old Testament with the longest ten in the New Testament showed 33 per cent. more positives and 50 per cent. less negatives in the Old Testament. The following interpretations of this difference are suggested:

1. Biologically, it means lower *vs.* higher development, doing *vs.* thinking, prophet and law, warrior and deed in the earlier period *vs.* teacher and preaching, thinker and doctrine in the later period.

Faith, the product of bodily action, tends to exaggeration by positives; while doubt, due to mental activity, tends to exaggeration by negatives.

2. Sociologically, it means great social solidarity *vs.* relative individuality. The Hebrews, as selected and protected by Almighty Jehovah, developed a strong national pride and unanimity of thought and action; and this "crowd-spirit"—in the scientific sense—accounts for many irresponsible generalizations, since their prodigious national pride "not only idealized but magnified the past" in many references to it.

3. Psychologically, it means spontaneous imitation *vs.* intellectual initiative. Imitation tends to exclusions of negatives, while increasing intellectual horizon brings questionings and oppositions to accepted views. Sections rich in positives, as the writings of Paul and the first twelve chapters of Joshua, often indicate strong individualities, men of unrivaled force of character, of energetic action against great opposition. The masterful man in deed is likely, we infer, to put things strongly in expression.

Professor A. C. Armstrong discussed "The Idea of Feeling in Rousseau's Religious Philosophy." He remarked that Rousseau's religious philosophy was based on inner sentiment. The *sentiment intérieur* is subjective in the sense of individual and in the sense of inward. From both its individuality and its inwardness proceeds its certitude—which Rousseau highly values—and which depends also on a farther characteristic, the immediacy of the "inner light." Nevertheless, the *sentiment intérieur* is not exclusively affective in its nature, and when purely emotional, may vary through a wide range of affective experience. At its lowest level it amounts to the satisfaction of desire by religious ideas and principles. Or it may become shallow sentimentalism, as in the second half of the *Nouvelle Héloïse*. A third and higher stage is the phase of pure religious aspiration, while in a fourth form it develops into an appreciation of religious values. This evaluating factor in Rousseau's religious thinking has been neglected; but it can be shown by quotation from many of his writings. In general it is evident that the idea of feeling in Rousseau requires careful analysis before well-grounded inferences can be drawn from his doctrine concerning either psychological or historical or constructive questions.

Mr. Max Eastman read a paper on "The Pragmatic Meaning of Pragmatism." The thesis of the paper was that pragmatism, in intellectualist terms, is skepticism with its logical consequences developed; and in pragmatist terms, the rejection of metaphysics as a serious discipline. This was shown to be consistent with the origin

of pragmatism in the biological attitude, which was developed in the writings of such philosophic scientists as Huxley and Clifford. It was then shown that as a dialectic implication of Mr. James's definition of meaning, metaphysics proper becomes not the most divine science, but the most meaningless science. It was stated that his failure to grasp this negative aspect of his definition is what gives obscurity to the whole contents and procedure of his book; it is what gives rise to the technical error of thinking that pragmatism is a confused and unthinkable theory, and the popular error of thinking it is a philosophy which consists in congratulating yourself upon your own prejudices.

In conclusion it was stated that the difference between the position of Professor James and that of Professor Dewey is chiefly this: that Professor Dewey understands the new definition of meaning to be a limitation of it and therefore a limitation of the field of serious inquiry, while Professor James does not. Professor Dewey endeavors to be consistently a pragmatist, while Professor James is satisfied with being simply pragmatic, as by the pragmatist's hypothesis we all are.

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REVIEWS AND ABSTRACTS OF LITERATURE

L'orientazione psicologica dell' etica e della filosofia del diritto. A. BONUCCI, Perugia, 1907. Pp. viii + 378.

Dr. Bonucci was already known to students of the philosophy of right as the author of "La legge comune nel pensiero greco" (1903) and "La derogabilità del diritto naturale nella scolastica" (1906), in which he had shown himself well qualified for treating historical problems. In tracing the origin and evolution of juridical doctrines of ancient and medieval thinkers he is painstaking, clear, and accurate, going to the original works themselves. In the latter work above-mentioned he shows that medieval thinkers were largely occupied in considering whether it were possible for God to break the natural law, and in showing how such a transgression, which, as coming from God, was necessarily just, ought to be regarded as just. He also shows that they saw clearly the problem of relative ethics together with the problem of absolute ethics, when they tried to determine whether in certain cases a transgression of the natural law by man could be just as answering to the necessities of practical life. Aristotle—especially Book V., of the *Nicomachian Ethics*—the principles of Roman law, certain passages of Scripture, and the consideration of practical needs were the sources of the problem of derogating from the law of nature.

Much less satisfactory is the critical part of the work. Not only has